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April 9, 2009

Via E Mail and First Class Mail
Thomas J. Krueger
Associate Regional Counsel
U.S. Environmental Protection Agency
77 West Jackson Boulevard (C-14J)
Chicago, Illinois 60604-3590

Re: Ellsworth Industrial Park
Summary of Core Comments on Draft RI

Dear Tom:

Pursuant to the discussion at our meeting on March 12, 2009, enclosed please find the SAO Group's Summary of Core Technical Comments on the Draft RI. We look forward to discussing these with you, other Agency representatives and Weston on April 17, 2009 at the Katten firm, commencing at 10:00 a.m. Katten representatives will also provide a call in number for those that cannot attend in person.

As discussed at our last meeting, this submittal is being provided for preliminary discussion purposes only, and is not intended to waive, limit, or in any way diminish the rights of the SAO parties or others to submit their own individual comments on the Draft RI as they deem appropriate at such time as the Agency may later designate. Additionally, it is our understanding that nothing contained in these comments shall be deemed an admission on the part of any SAO party.

If you have any questions or would like to discuss the enclosed submittal or any aspect of this matter before the meeting on April 17th, feel free to call any time.

Yours truly,

Bruce White

enclosure
cc: w/enclosure
Michael Berkoff (USEPA)
SAO Party Representatives (via e mail only)

Ellsworth - USEPA Draft RI
Summary of Core Technical Comments

1. There are numerous systemic flaws that permeate the Draft RI.

A. The Draft RI's HHRA is based upon the erroneous and, under RAGS, improper assumption that workers in the EIP will use the intermediate aquifer as a source of potable water over their lifetime. Current and future use of both the intermediate and bedrock aquifers for potable water supply is barred by local ordinance. The only two existing "grandfathered" wells in the EIP, one located on the Rexnord property and the other being the inactive or abandoned DG 10 (a/k/a PW-10), can be easily addressed through institutional controls. Thus, the human receptors to which exposure is modeled do not presently exist, nor will they exist in the future. As such, there is no basis for using the risk of soil contamination leaching to groundwater, in whole or in part, (i) to identify potential sources of groundwater contamination in the intermediate or bedrock aquifers, or (ii) as a basis for establishing screening levels or remedial objectives. (Identification of this core flaw in the HHRA is not intended to diminish the numerous other problems with that assessment that were identified in the parties' earlier comments on the draft HHRA, which were not addressed in the Draft RI).

B. The Draft RI fails to establish a contaminant pathway from the soil and/or shallow water bearing zone (SWBZ) to the alluvial aquifer and bedrock throughout the EIP. There is no fate and transport analysis presented that establishes such a pathway; rather the RI is based on a speculative assumption that the presence of contamination in a lower zone must mean that it came from contamination directly above.

(1) The Draft RI asserts that the migration of chemicals of potential concern is "likely occurring along naturally occurring partings, fissures, or bedding planes in the soil structure... ." (Section 7.3.1.1) However, out of the 285 total borings made as part of the RI, not a single boring identified partings, fissures, or bedding planes in the soil column.

(2) The Draft RI fails to establish the appropriate geological conditions for contaminant migration from the soil and/or SWBZ to the deeper aquifers and does not take into consideration the variability of geology, lithology, soil and groundwater depth and type throughout the EIP in its analysis. In fact, various geologic structures throughout the EIP will limit the migration of contaminants.

(3) There are too many inconsistencies between the presence or lack of contamination in the shallow soil and the shallow, intermediate, alluvial, and

bedrock aquifers to support the simplified fate and transport model proposed in the RI. While there is contamination in shallow soils and the alluvial aquifer in the EIP, there is virtually no contamination in the underlying bedrock aquifer, nor in some cases, the intervening intermediate zone(s).

C. The Draft RI's SSL analysis is incorrectly based on using MCLs in the alluvial aquifer beneath the EIP. Due to the lack of any exposure potential within the EIP as discussed above), any modeling of potential contaminant exposure from groundwater ingestion should be done as part of OU2 and based on MCLs in the bedrock aquifer and a point of compliance at the southern limit of OU2.

D. The Draft RI fails to consider the extent to which natural attenuation is already underway due to the age of the original releases and alleged distance traveled (fate and transport). If these facts are considered, source removal may not be required in order for natural attenuation to be identified as the appropriate groundwater remedy for the bedrock aquifer (and thereby obviating any need to establish SSLs and SROs for migration to groundwater pathway within the EIP.)

E. The Draft RI fails to consider offsite sources to the east of EIP as potential sources of bedrock aquifer contamination, even though its own groundwater contamination contours and historical data from wells outside the EIP such as well DG 6, and documented solvent contamination in St. Joseph Creek in 1988-1989, point to such sources. (See, e.g., Figure 6-26.)

F. The Draft RI indicates that finding COCs in the soil gas samples is indicative that the soil-vapor intrusion pathway is complete (See, e.g. pp. 10-24). It is inappropriate to make any assumptions about vapor intrusion pathways or risk when both USEPA and IEPA have yet to promulgate standards for assessing the potential risk posed by vapor intrusion.

G. There are serious questions concerning the methodology for collection and reduction of the RI data, and the manner in which it was reported and presented in the Draft, such that any analysis based on that data is of doubtful validity. (See Section 2 below.)

H. The Draft RI's specific three stage SSL analysis for each of the study areas is fundamentally flawed. First, USEPA improperly uses Soil Screening Levels (SSLs) as de facto Soil Remedial Objectives (SROs). Second, even if the intended approach of developing SSLs that range from most to least stringent is conceptually acceptable, errors in the SSL calculations undermine that analysis. (See Section 3 below.)

2. There are numerous issues regarding the collection, reporting, and presentation of sample data that undermine any analysis based on that data.

A. Weston did not use best available technology for collecting soil samples. The Macro-Core sampling methodology used by Weston significantly increased the potential for cross contamination between sample intervals through "drag down and sloughing soils, especially while drilling though coarse grained sediments. This effect may also lead to inaccurate interpretations of the thickness of soil layers. These issues could have been eliminated through the use of dual tube sampling equipment for continuous borehole sampling - a methodology recommended by USEPA guidance.

B. The "duplicate" soil sample results obtained by the fixed lab do not match up well with the results from the mobile lab (or, for that matter, with the samples that were split and run thru the mobile lab twice). These anomalies indicate either that lab accuracy is highly questionable or there is a very high degree of variability between samples that are located next to one another (all part of the same 5 gram split). These outcomes raise serious questions regarding the accuracy of the RI overall lab results and the utility of any of the data collected during the RI..

C. The geologic cross-sections are not universally accurate or reliable. For example, in Appendix G, Figure f_geo_update shows nearly 20 ft of sand and gravel on top of the bedrock, which is shown only 40 - 50 ft below grade. Actual boring data from MW262D shows clay from 2 ft to 66 ft; sand from 66 - 77 ft, silty clay from 77 - 85 ft, a thin layer of sand and gravel from 85 - 93 ft; bedrock at 93 - 130 ft. Further, too much of the site geology as reflected in these cross sections is based on speculation and not actual data.

D. The USEPA has erroneously *included* groundwater data in the Draft RI that it properly *excluded* from the HHRA because of collapse of soils into boreholes. (GW 056-060-029-030-012-132). This error was compounded by repeated citation to these flawed results in report, text, table and figures (Text pages 4-22, 4-24, 4-25, 5-12, 6-48 and 10-17; Tables 4-4, 5-4, 6-9a, 6-9b, 6-9g, 6-9.2 and 6-9k); and Figures: 4-1, 4-27, 4-28, 4-33, 4-35, 4-37, 5-17, 5-18, 5-19, 5-24, 5-26, 5-28, 6-20, 6-21 and 6-22). Consistent with the proper exclusion of this groundwater data from the HHRA, these results should also be excluded from the RI entirely. Indeed, groundwater samples collected from *any* borehole that contained sloughing or collapsed soil should not be used in the HHRA or RI.

E. The February 2007 GW elevations listed in Table 5-8 for all wells installed prior to the RI are all incorrect, effectively negating any analysis in the RI based on the reported elevations. Weston apparently used the ground elevation instead of the elevation of the top of casing for measurements taken in these wells. This error extends to 45 wells that are reported in Table 5-8 (BD1D, BD1I, BD2D, BD2I, BD3I,

BD8D, BD8I, OV1I, OV4I, OV5I, OV9I, BD5D, BD5I, OV2I, OV3I, SB3D, SB17I, BD7D, BD7I, OV8I, BD6D, BD6I, OV7I, BD12D, BD13D, MW1S, MW2S, MW3I, MW3S, MW4S, MW5S or 5I, MW6S, MW8S, MW10I, LD1I, BD14D, BD14I, OV6I, BD16D, BD4D, BD4I, BD9D, BD10D, BD17D, and BD18D).

As a result of these errors, all figures drawn using the data from Table 5-8, including Figure 3-10 (Alluvial Potentiometric Surface Map - February 2007) and Figure 3-11b (Bedrock Aquifer Potentiometric Surface Map - February 2007), as well as the geologic cross sections that depict water levels (Figures 3-6a through 3-6m), are all incorrect. Moreover, the vertical gradients for the pre-RI wells presented in Table 3-1 (16 wells: BD8I, BD8D, BD2I, BD2D, BD1I, BD1D, BD7I, BD7D, BD6I, BD6D, BD5I, BD5D, BD14I, BD14D) are also incorrect.

F. Numerous soil sample locations, soil gas locations and monitoring well locations are depicted incorrectly (e.g., samples were not taken at the locations shown). Just a few examples of these reporting and presentation errors for each of the media sampled:

(1) Figure 4-8 (Soil Gas Sampling Location Map - Area G) incorrectly depicts sample locations PS029 and PS030. The samples are depicted on the figure as (roughly) located in the northeast and southwest corners of the building, when the samples are in fact located in (roughly) the northwest and southeast corners of the building. This is essentially a "90 degree" rotation of the sample locations inside this building.

(2) Figures 4-21, 5-9, 6-3, 6-4a, 6-4b, 6-11a, 6-11b, 6-11c, 6-11d, 6-11e, 6-11f, 6-11g, incorrectly depict sample locations 198 and 199. The samples are depicted on the figures as (roughly) located in the northeast and southwest corners of the building, when the samples are in fact located in the northwest and southeast corners of the building. This is again, essentially a "90 degree" rotation of the sample locations inside this building.

(3) Figure 6-26 depicts a well noted as EIP-DG1DD. However, this well does not exist. There is no log for this well and no water level for this well in the draft RI. If Weston intended to refer to EIP-DG1D (but incorrectly wrote EIP-DG1DD), there is a more fundamental error with respect to EIP-DG1D: Weston incorrectly assumed that well EIP-DG1D is a bedrock well when in fact it is an alluvial well.

(4) Figure 3-10 improperly combines water levels from shallow wells in the overburden with the deeper wells in the overburden.

These errors raise questions concerning how many other sample locations in the RI are not accurately depicted, mislabeled, or misinterpreted.

G. USEPA inappropriately used extrapolation to develop contours and extent of contamination lines based on too few data points; and there is no way to assess the basis upon which those contours and lines were drawn (no assumptions or program information was provided). One example of the potential for substantial errors in the development of the contours was the use of sample locations at different depths with different mixtures of parameters to identify an area of contamination. Another example is the misleading contouring of contamination in the SWBZ, as depicted in Figures 6-20 through 6-22, while in Section 3.5.2.1, USEPA correctly notes that it is inappropriate to contour the potentiometric surface of the SWBZ due to it being "predominantly discontinuous."

H. The USEPA was inconsistent in its use of others' data. It appears that the USEPA did not use or (at best) was spotty in its use of lab data from non-USEPA sources other than the IEPA/ IDOH sampling of the downgradient plume in the residential area. For example, it appears that the USEPA did not use or incorporate into its database the sub-group's sampling of Magnetrol, the sub-group's sampling at the old DGSD site to the east of the EIP or at Magnetrol, Lindy's sampling on Lindy's property, or the data submitted to the IEPA for the Morey site. Additionally, it appears that USEPA did not use data from the IEPA testing of bedrock groundwater from the Belmont Highwood, Maple Hill, and Downers Grove water supply wells, nor does the Draft RI reference the historic detections of solvents in St. Joseph Creek surface water grab samples taken east (upstream) of the EIP.

3. **USEPA's SSL analysis is flawed at all levels - the conceptual approach is contrary to policy, USEPA ignored more up-to-date procedures to develop SROs, and substantial calculation errors were made.**

A. USEPA improperly uses Soil Screening Levels (SSLs) as de facto soil remediation objectives (SROs). Because of the simplifying assumptions identified by USEPA in their 1996 SSL User's Guide, substituting SSLs as SROs at EIP is not (i) technically appropriate, (ii) in-line with Agency guidance, or (iii) consistent with the models inherent within current risk-based corrective action procedures/formulas (*e.g.*, Illinois TACO regulations). These overly conservative screening levels may be useful for preliminary comparison purposes, but are clearly not appropriate for determining remediation objectives at individual sites.

B. The RI soil screening levels, which are based on soil exposure scenarios for ingestion, inhalation and soil to groundwater migration are only valid in the unsaturated zone (above the water table). It appears that these screening levels have been applied by Weston at depths below the saturated zone.

C. The calculation of the Site Specific SSLs in the Draft RI is erroneous. Some of the more serious errors include:

(1) The Site Specific SSLs were calculated using the wrong hydraulic gradient. In calculating the Site Specific SSLs (least stringent standards), the USEPA used an incorrect hydraulic gradient that was off by a factor of 10 -- the Agency and Weston used the incorrect number of 0.34 ft/ft when they should have used 0.034 ft/ft. (Independent of this error, 0.034 ft/ft. is not a realistic gradient for the alluvial aquifer.)

(2) An infiltration assumption of 0.3 meters/year is not appropriate for areas under buildings, concrete slabs, parking lots, and roadways which make up a substantial portion of the areas of concern identified in the Draft RI.

(3) Weston used the wrong Region 9 criterion for TCE in its 'most stringent' SSL analysis. The Draft RI uses an out of date 2004 screening criterion of 0.28 ug/l (RI at 6-8.) Region 9 now uses 1.7 ug/l as a tap water screening number.

(4) Use of the geometric mean for hydraulic conductivity of the alluvial aquifer to establish the Site Specific SSLs is not appropriate for all areas within the EIP.